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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,317	07/29/2003	Otto Rosenauer	TITN 20.668 (330906-00019	6601

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PANDISCIO & PANDISCIO
470 TOTTEN POND ROAD
WALTHAM, MA 02451-1914

EXAMINER	
BELT, SAMUEL E	

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

C

Office Action Summary	Application No.	Applicant(s)	
	10/629,317	ROSENAUER ET AL.	
	Examiner	Art Unit	
	Samuel E. Belt	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *6 and 8-11* is/are allowed.

6)☐ Claim(s) *1-5, 7, and 12-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

As a reminder the informal drawings are of sufficient quality for examination purposes only. Accordingly, new formal drawings are required at the time the application is allowed. Failure to timely submit new formal drawings at the time of allowance will result in **ABANDONMENT** of the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by White (U.S. 2,281,899).

White in Figure 1 teaches a piston pump capable of transporting a highly viscous medium from a storage reservoir (well bore not shown, container or chamber holding fluid entering inlet 36) to a spray gun. The pump has a differential piston (moving valve 46 constitutes a piston in that is slides up and down separating two pressure chambers above and below the piston) positioned in a cylindrical housing (8) and axially (vertical axis) drivable. The pump (lower end piston 52 and pump chamber 30') has a first pressure chamber (30') connected to a second pressure chamber (15) via a connecting

line (25) having a check valve (19) therein. The pump is adapted to be connected with a storage reservoir (well bore not shown, container or chamber holding fluid entering inlet 36) via an inlet valve assembly (38). The differential piston (46) is connected to a dipping piston (52), which is adapted to dip into the medium to be transported. The dipping piston (52) is attached to a piston rod (29), wherein a pass-through (see bore within solid component forming passages 24, with rod 29 passing therethrough) of the piston rod (29) from the first pressure chamber (30') is closed fluid-tight by at least one seal (shown not enumerated). The pump has a transport line (26) which is disposed proximate the pass-through (see bore within solid component forming passages 24, with rod 29 passing therethrough) of the piston rod (29), said transport line and the dipping piston being adapted for insertion into the storage reservoir, the dipping pistons being adapted to push the medium through said transport line (**See Note**). The transport line (24, 26) is, at least in part, laterally offset from the piston Rod (29); wherein an extension piece (23) extends from said transport line and houses the dipping piston (52) and is insertable into the storage reservoir. The inlet valve (38) is located up-line from the first pressure chamber (30').

(**Note:** In response to applicants amendments regarding claim 1 see "Remarks" page 1, have been received but are not deemed persuasive because the limitation of being "adapted to" is not a positive limitation but merely requires the capability to so perform. It is inherent that the pumps of both White and Sweeney are capable of being inserted into the storage reservoir (i.e. the ground) as seen in Figure 6 of the White reference.)

Claim 1, 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sweeney (U.S. 6,193,476 B1).

Sweeney in Figure 1, teaches a piston pump capable of transporting highly a viscous medium from a storage reservoir (bore not shown, container or chamber holding fluid entering inlet 4) to a spray gun. The pump has a differential piston (38) positioned in a cylindrical housing (47) and axially drivable. The pump (lower end piston 37 and pump chamber 42) has a first pressure chamber (42) connected to a second pressure chamber (41) via a connecting line (15) having a check valve (12) therein. The pump is adapted to connect with a storage reservoir (bore not shown, container or chamber holding fluid entering inlet 4) via an inlet valve assembly (5). The differential piston (38) being connected to a dipping piston (37) that dips into the medium to be transported. The dipping piston (37) is attached to a piston rod (11) extending from the differential piston, wherein a pass-through (see component 18 with rod 11 passing therethrough) of the piston rod (11) from the first pressure chamber (42) to the dipping piston is closed fluid-tight by at least one seal (20). The pump has a transport line (15, 41) disposed proximate the pass-through (18) of the piston rod (11), said transport line and the dipping piston being adapted for insertion into the storage reservoir, the dipping pistons being adapted to push the medium through said transport line.

The transport line (15, 41) is positioned, at least in part, concentric to the piston rod (11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over White, as applied to claim 1, and in further view of Alaze (U.S. 6,267,569 B1).

White set forth a device as described above, which is substantially analogous to the claimed invention. The White device differs from the claimed invention in that there is no explicit teaching of the inlet valve including a ball received in a cage through which fluid can flow and in which the ball is urged by a spring towards the valve seat. Alaze in

Figure 1 teaches a piston pump with an inlet valve (40, 44) including a ball (40) received in a cage (46) through which fluid can flow and in which the ball is urged by a spring (42) towards the valve seat (44). This allows a predetermined biasing force on the ball valve to allow a predetermined amount of elevated pressure to build up before the vale is opened, generating higher compression ratios and guided precise movement of the ball valve. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the White device by, incorporating the spring biased cage ball valve configuration, as taught by Alaze, in order to advantageously allow a predetermined biasing force on the ball valve to allow a predetermined amount of elevated pressure to build up before the vale is opened, thus generating higher compression ratios and guided precise movement of the ball valve.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sweeney, as applied to claim 1, and in further view of Alaze.

Sweeney set forth a device as described above, which is substantially analogous to the claimed invention. The Sweeney device differs from the claimed invention in that there is no explicit teaching of the inlet valve including a ball disposed in a cage through which fluid can flow and wherein the ball is urged by a spring towards the valve seat. Alaze in Figure 1 teaches a piston pump with an inlet valve (40, 44) including a ball (40) received in a cage (46) through which fluid can flow and in which the ball is urged by a spring (42) towards the valve seat (44). This allows a predetermined biasing force on the ball valve to allow a predetermined amount of elevated pressure to build up before

the vale is opened, generating higher compression ratios and guided precise movement of the ball valve. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the White device by, incorporating the spring biased cage ball valve configuration, as taught by Alaze, in order to advantageously allow a predetermined biasing force on the ball valve to allow a predetermined amount of elevated pressure to build up before the vale is opened, thus generating higher compression ratios and guided precise movement of the ball valve.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over White, as applied to claim 1.

White set forth a device as described above, which is substantially analogous to the claimed invention. The White device differs from the claimed invention in that there is no explicit teaching of the first pressure chamber having a volume of about 1.2 to 2.5 times the volume of the second pressure chamber. With respect to the exact volumes of the chambers in the pump, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136. One of ordinary skill in the art would have been able to determine the chamber volumes for pump optimization.

Claims 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweeney, as applied to claim 1.

In regards to claim 12, applicants failure to argue the Examiners Official Notice that the flow through pipe couplings to connect segments of tubular pipes was well known at the time the invention was made in order to extend pipe length and fluid passages therein is taken as an admission of prior art. In the Sweeney pump, it would have been obvious to extend the pump for pumping a greater depths. In particular it would have been obvious to use pipe couplings to extend the length of the rod (11) to extend the depth range of the pump utilizing tubes or limited length. In this case, segments of the tubular piston rod (11) would have been attached to the differential piston (38) by a connecting piece (the pipe coupling) though which fluid can flow and which is attached to the differential piston (through the pipe segments of piston rod 11).

Regarding claim 13 Sweeney sets forth a device as described above, which is substantially analogous to the claimed invention. The Sweeney device differs from the claimed invention in that there is no explicit teaching of the first pressure chamber having a volume of about 1.2 to 2.5 times the volume of the second pressure chamber. With respect to the exact volumes of the chambers in the pump, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135

F.2d 11, 57 USPQ 136. One of ordinary skill in the art would have been able to determine the chamber volumes for pump optimization.

Response to Arguments

Applicant's arguments filed on 02/27/2006 have been fully considered but they are not persuasive because the limitation of being "adapted to" is not a positive limitation but merely requires the capability to so perform. It is inherent that the pumps of both White and Sweeney are capable of being inserted into the storage reservoir (i.e. the ground) as seen in Figure 6 of the White reference.

The title for the application has been corrected to read "Piston Pump For High Viscosity Materials".

Allowable Subject Matter

Claims 6 and 8-11 are allowed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel E. Belt whose telephone number is (571) 272-7820. The examiner can normally be reached on M-F, 8 - 4:30EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEB

Samuel E. Belt
05/09/2006

CHARLES G. FREAY
PRIMARY EXAMINER